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10/691,570	10/24/2003	Shigeru Nemoto	244406US2	6947

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1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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CHAO, JUSTIN

ART UNIT	PAPER NUMBER
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3709

NOTIFICATION DATE	DELIVERY MODE
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09/04/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/691,570

Applicant(s)

NEMOTO, SHIGERU

Examiner

Justin Chao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on papers through 12/07/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/24/03, 7/29/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the limitation "imaging speed" in claim 29. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claim 24 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 24 recites the limitation "said imaging input" in line 19. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:  
  
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 1, 5-10, 11, 19-25, 27, 29, 30, 32-39 rejected under 35 U.S.C. 103(a) as being unpatentable over Duchon 2003/0018252 in view of Langlotz 6,366,683.
6. Regarding claim 1, Duchon discloses: a liquid injection mechanism (10 figs 1a, 1b), condition storage means (paras 20 and 22) and injection control means (para 22 where different injection procedures can be controlled by manually touching a screen to

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choose portions of a human anatomy). However, Duchon does not disclose the following limitations: image storage means, section display means, section input means, region displaying means, region input means, and operation reading means.

7. Langlotz teaches within the same field of endeavor: image storage means (50 and 52 fig 2; col 6, ll. 46-57, col 8, ll. 6-20), section display means (52 fig 2), section input means (50 and 52 fig 2; col 5, ll. 31-45; col 6, ll. 46-57, col 8, ll. 6-20), region displaying means (50 and 52 fig 2; col 6, ll. 46-57, col 8, ll. 6-20), region input means (50 and 52 fig 2; col 6, ll. 46-57, col 8, ll. 6-20), operation reading means (col 6, ll. 46-57; col 6, l. 66 - col 7, l. 14; col 8, ll. 6-20 where anatomical region is selected and data specific to that region is retrieved).

8. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz in order to provide a system with graphics that would be "easily interpreted by a referring physician," as taught by Langlotz (col 4, ll. 50-58).

9. Regarding claim 5, Duchon discloses: body display means (fig 30), body input means (para 180 and 181), means for storing operating conditions for each of body items (para 20 and 22), and means for reading the data of the operating conditions corresponding to the selected body item (para 20 and 22).

10. Regarding claim 6, Duchon discloses: body display means (fig 30), body input means (para 180 and 181), and operation adjusting means (para 20 and 22).

11. Regarding claim 7, Duchon discloses: body input means (fig 30) and operation adjusting means (para 20 and 22).

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12. Regarding claim 9, Duchon discloses the invention as claimed and as discussed above. However, Duchon does not disclose the following limitations: means for entering the data on-line from an external database device. Langlotz teaches within the same field of endeavor: means for entering the data on-line from an external database device (20 fig 1; col 4, l. 66 - col 5, l. 16).

13. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz in order to "enable ... any image analyst to call up from a database basic identifying information about an image" to provide a system with graphics that would be "easily interpreted by a referring physician," as taught by Langlotz (col 4, ll. 50-58).

14. Regarding claim 10, Duchon discloses: means for detecting the data of body items from subject and entering the detected data of body items (para 197).

15. Regarding claim 11, Duchon discloses: body items include at least one of a body weight, a body shape, an age, and a gender (para 197).

16. Regarding claim 19, Duchon discloses: a plurality of imaging diagnostic apparatus types (fig 32; para 180) having different imaging items (paras 197-203 disclosing items such as flow rate, volume, rise time, etc...), imaging apparatus display means (fig 32), imaging apparatus input means (paras 180 and 181), means for storing the data of operating conditions for the types of the imaging diagnostic apparatus (para 180), and operation reading means (para 180).

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17. Regarding claim 20, Duchon discloses: imaging storage means (paras 197-203), imaging display means (fig 32), imaging input means (paras 180 and 181), imaging reading means (paras 197-203) and operation adjusting means (paras 180 and 181).

18. Regarding claim 21, Duchon discloses: imaging display means (fig 32), imaging input means (paras 180 and 181), means for storing the data of operating conditions (para 180), and means for reading the data of operating conditions corresponding to the selected imaging item (paras 197-203).

19. Regarding claim 22, Duchon discloses: imaging display means (fig 32), imaging input means (paras 180 and 181) and operation adjusting means (paras 180, 197-203).

20. Regarding claim 23, Duchon discloses: imaging input means (paras 180 and 181) and operation adjusting means (paras 180, 197-203).

21. Regarding claim 24, Duchon discloses: means for accepting an input action to enter data of the selected imaging item (paras 180 and 181).

22. Regarding claim 29, Duchon discloses: imaging speed of fluoroscopic image (figs 32 and 33).

23. Regarding claims 8, 25, 27 and 30, Duchon discloses: medium loading means and input means for entering data from information storage medium which is loaded (fig 11A; para 15-18 disclosing a personal computer). While not positively disclosed, Examiner takes official notice that it is notoriously well known in the art to include a removably loading data storage device with a personal computer such as a Compact Disc Read-Only Memory (CD-ROM), floppy disk or solid state flash drive.

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24. Regarding claim 32, Duchon discloses: operation display means (fig 4), operation manual input means (fig 4; paras 111, 119-124), and condition updating means (paras 197-206).

25. Regarding claim 33, Duchon discloses: operation display means (fig 4), operation manual input means (fig 4; paras 111, 119-124) and operation adjusting means (fig 4; paras 111, 119-124).

26. Regarding claim 34, Duchon discloses: an injection head (fig 1), a display panel connected parallel to injection head (fig 1), means for moving cylinder and piston relatively to each other (fig 1; paras 63-68). However, Duchon does not disclose the following limitations: section display means and region displaying means. Langlotz teaches within the same field of endeavor: section display means (52 fig 2) and region displaying means (50 and 52 fig 2; col 6, ll. 46-57, col 8, ll. 6-20).

27. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz in order to provide a system with graphics that would be "easily interpreted by a referring physician," as taught by Langlotz (col 4, ll. 50-58).

28. Regarding claim 35, Duchon discloses: a touch panel (58 fig 1; para 22). However, Duchon does not disclose the following limitations: section input means and region input means. Langlotz teaches within the same field of endeavor: section input means (50 and 52 fig 2; col 5, ll. 31-45; col 6, ll. 46-57, col 8, ll. 6-20) and region input means (50 and 52 fig 2; col 6, ll. 46-57, col 8, ll. 6-20).

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29. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz in order to provide a system with graphics that would be "easily interpreted by a referring physician," as taught by Langlotz (col 4, ll. 50-58).

30. Regarding claim 36, Duchon discloses: pressure detecting means (para 76) and pressure displaying means (514 fig 30; para 76).

31. Regarding claim 37, Duchon discloses: storing data of operating conditions (paras 20 and 22), reading the data of operating conditions corresponding to the selected one of regions (paras 20 and 22), and controlling operation of the liquid injection mechanism under the operating conditions whose data have been read (paras 20 and 22). However, Duchon does not disclose the following limitations: storing data of schematic images of body sections and regions, displaying the body sections in the shape of a human body, receiving an input action to select one of the body sections, displaying at least one of regions in relation to the selected section and receiving an input action to select one of the regions. Langlotz teaches within the same field of endeavor: storing data of schematic images of body sections and regions (50 and 52 fig 2; col 6, ll. 46-57, col 8, ll. 6-20), displaying the body sections in the shape of a human body (52 fig 2), receiving an input action to select one of the body sections (50 and 52 fig 2; col 5, ll. 31-45; col 6, ll. 46-57, col 8, ll. 6-20), displaying at least one of regions in relation to the selected section (50 and 52 fig 2; col 6, ll. 46-57, col 8, ll. 6-20) and receiving an input action to select one of the regions (50 and 52 fig 2; col 6, ll. 46-57, col 8, ll. 6-20).

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32. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz in order to provide a system with graphics that would be "easily interpreted by a referring physician," as taught by Langlotz (col 4, ll. 50-58).

33. Regarding claim 38, Duchon in view of Longlotz discloses the method of injecting a contrast medium with a liquid injection mechanism as claimed and as discussed above. However, it is not positively recited that a computer program, or software, is used to perform the method as claimed. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a computer program in conjunction with the computer hardware to perform the method steps because both hardware and software is necessary to operate a computer.

34. Regarding claim 39, Duchon in view of Longlotz discloses the method of injecting a contrast medium with a liquid injection mechanism as claimed and as discussed above. Furthermore, it would have been obvious to use a computer program to perform the method as claimed. However, it is not positively recited that an information storage medium is used to store the data of the computer program. It would have been obvious to one of ordinary skill in the art at the time of the invention to use an information storage medium, such as a CD-ROM, floppy disk or solid state flash drive, to store the data of the computer program in order to transfer, install or archive the computer program.

35. Claims 2-4, 12-18, 26, 28 and 31 rejected under 35 U.S.C. 103(a) as being unpatentable over Duchon in view of Langlotz further in view of Uber 5,840,026.

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36. Regarding claim 2, Duchon in view of Langlotz discloses the invention as claimed and as discussed above. Duchon discloses: a medium injection mechanism (52 and 10 fig 1) and a solution injection mechanism (50 and 10 fig 1). However, Duchon in view of Langlotz does not disclose the following limitations: means for storing data of operating conditions and means for controlling operation of medium injection mechanism and solution injection mechanism. Uber teaches within the same field of endeavor: means for storing data of operating conditions (col 2, ll. 17-31; col 3, ll. 14-18 where operating conditions for each body region is read upon as an injection profile), and means for controlling operation of medium injection mechanism and solution injection mechanism which are interlinked under the operating conditions (col 2, ll. 17-31; col 3, ll. 14-18).

37. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz further in view of Uber in order to provide "the appropriate injection flow rate and concentration for a given patient based on patient information entered into the system," as taught by Uber (col 2, ll. 56-59).

38. Regarding claim 3, Duchon in view of Langlotz discloses the invention as claimed and as discussed above. However, Duchon in view of Langlotz does not disclose the following limitations: means for storing data of a variable pattern in which an injection rate of the contrast medium is changed with time to keep fluoroscopic image in a predetermined contrast range, means for changing, with time, an operating speed of the liquid injection mechanism depending on variable pattern. Uber teaches within the same field of endeavor: means for storing data of a variable pattern in which an injection rate of contrast medium is changed with time to keep fluoroscopic image in a

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predetermined contrast range (col 3, ll. 14-28; col 12, ll. 6-26), means for changing, with time, an operating speed of liquid injection mechanism depending on variable pattern (col 3, ll. 14-28; col 12, ll. 6-26).

39. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz further in view of Uber in order to provide "the best image quality for the particular patient," as taught by Uber (col 3, ll. 25-28).

40. Regarding claim 4, Duchon in view of Langlotz discloses the invention as claimed and as discussed above. However, Duchon in view of Langlotz does not disclose the following limitations: means for storing the data of the variable pattern in which the contrast of the fluoroscopic image produced by the contrast medium approximates an optimum level. Uber teaches within the same field of endeavor: means for storing the data of the variable pattern in which the contrast of the fluoroscopic image produced by the contrast medium approximates an optimum level (col 3, ll. 25-28).

41. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz further in view of Uber in order to provide "the best image quality for the particular patient," as taught by Uber (col 3, ll. 25-28).

42. Regarding claims 12-17, Duchon in view of Langlotz discloses the invention as claimed and as discussed above. However, Duchon in view of Langlotz does not disclose the following limitations: liquid display means, liquid storage means, liquid reading means, liquid input means, condition storage means, operation reading means and operation adjusting means. Uber teaches within the same field of endeavor: liquid display means (52 and 54 fig 3a; col 6, ll. 31-52; col 9, ll. 2-12), liquid storage means

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(col 6, ll. 31-52; col 9, ll. 2-23), liquid reading means (col 6, ll. 31-52; col 9, ll. 2-23), liquid input means (col 6, ll. 31-52; col 9, ll. 2-23), condition storage means (col 6, ll. 31-52; col 9, ll. 2-23), operation reading means (col 6, ll. 31-52; col 9, ll. 2-23) and operation adjusting means (col 6, ll. 31-52; col 9, ll. 2-23).

43. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz further in view of Uber in order to “continuously adjust fluid [parameters]...to optimally adapt the dosing to patient specific parameters...saving money and reducing patient risk ” as taught by Uber (col 10, ll. 31-47).

44. Regarding claim 18, Duchon in view of Langlotz discloses the invention as claimed and as discussed above. However, Duchon in view of Langlotz does not disclose the following limitations: liquid items represent the concentration of an effective component of the contrast medium. Uber teaches within the same field of endeavor: liquid items represent the concentration of an effective component of the contrast medium (col 6, ll. 31-52; col 8, ll. 8-16; Table 1 teaching relationship between liquid item type/concentration and volume of Iodine).

45. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz further in view of Uber in order to “continuously adjust fluid [parameters]...to optimally adapt the dosing to patient specific parameters...saving money and reducing patient risk ” as taught by Uber (col 10, ll. 31-47).

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46. Regarding claims 26 and 28, Duchon in view of Langlotz discloses the invention as claimed and as discussed above. However, Duchon in view of Langlotz does not disclose the following limitations: means for entering the data of the selected imaging item on-line. Uber teaches within the same field of endeavor: means for entering the data of the selected imaging item on-line (fig 3a; col 6, ll. 7-31).

47. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz further in view of Uber in order to allow for "automatic adjustment of the system," as taught by Uber (col 6, ll. 29-30).

48. Regarding claim 31, Duchon in view of Langlotz discloses the invention as claimed and as discussed above. However, Duchon in view of Langlotz does not disclose the following limitations: means for entering the data of operating conditions on-line, and condition updating means for updating the data of operating conditions with the data of operating conditions entered on-line. Uber teaches within the same field of endeavor: means for entering the data of operating conditions on-line (fig 3a; col 6, ll. 7-31), and condition updating means for updating the data of operating conditions with the data of operating conditions entered on-line (col 6, ll. 7-31; col 6, ll. 45-52).

49. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Duchon in view of Langlotz further in view of Uber in order to allow for "automatic adjustment of the system," as taught by Uber (col 6, ll. 29-30).

### ***Conclusion***

50. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, see Notice of References Cited.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Chao whose telephone number is 571-270-3072. The examiner can normally be reached on Mon-Fri, alt Fri off, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on 571-272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Justin Chao/  
8/28/07

  
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